

STATE OF TENNESSEE DEPARTMENT OF HEALTH **ENVIRONMENTAL LABORATORIES**

TDH: Lab Services JRL Lab Services - Jackson Regional Lab Jackson, TN 38301 731-426-0686

TDH: Lab Services KRL Lab Services - Knoxville Regional Lab Knoxville, TN 37920 865-549-5201

TDH: Lab Services NCL Lab Services - Nashville Central Lab Nashville, TN 37243 615-262-6300

Sent To:

Greg Denton

TDEC-WPC

6th Floor, L & C Tower Annex

401 Church Street

Nashville, TN 37243-1534

Michael Atchley

TDEC-WPC

Knoxville FO

3711 Middlebrook Pike

Knoxville, TN 37921

Lab ID:

K00002659

Knoxville Regional Laboratory

Sampling Agency: TDEC: Division of Water Pollution Control

Billing Code:

327.34-20

This is to certify that the following results were determined using good laboratory pratices and in accordance with federal or state approved methodologies.

Analytical Supervisor

K00002659001

Project Name:

TVA-Ash Spill

Sample Description:

Sampler Project Name: TVA Ash Spill

Emory River mile 12.1

Project Site No.:

Station No.:

EMORY012.1RO

Date/Time Collected:

07/28/2009 11:52

Sampler's Name: County:

Geoff Klein **ROANE - 73**

Sample Matrix:

EFO:

Water

Sampling Agency:

Knoxville

Billing Code:

TDEC-WPC 327.34-20

Send Report To:

TDEC-WPC

Agency Invoiced:

TDEC-WPC

Priority Date:

Date/Time Received:

07/28/2009 13:10

Received By:

E McCrary

Field Determinations

pH:

7.80

pH Units

Chlorine, residual:

Conductivity:

96

uMHO

Temperature:

25.52 **Dissolved Oxygen:** 7.32

mg/L

Other:

Flow:

CFS

TEST: Alkalinity, Total	Total METHOD: EPA 310.2						
ANALYTE	RESULT UNITS MDL MQL ANALYZED BY						
Total Alkalinity	23	mg/L	3.8	10	M Chen	8/4/2009	

TEST: Hardness, Calcium	ME.		-			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	22	mg/L	0.7	1	M Chen	8/4/2009

TEST: Residue, Settleable METHOD: SM 2540F							
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Settleable Residue	U	ml/L	0.10	0.10	P Leathers	7/29/2009	

TEST: Residue, Suspended	ME					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Suspended Solids	U	mg/L	10	10	A Peeples	7/31/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00002659002

Project Name:

TVA-Ash Spill

Sample Description:

Emory River mile 2.1

Sampler Project Name: TVA Ash Spill

Project Site No.:

Station No.:

EMORY002.1RO

Date/Time Collected:

07/28/2009 09:52

Sampler's Name: County:

Geoff Klein

ROANE - 73

Sample Matrix: EFO:

Water

Sampling Agency:

Knoxville

TDEC-WPC

Billing Code: Send Report To: 327.34-20

Agency Invoiced:

TDEC-WPC **TDEC-WPC**

Priority Date:

Date/Time Received:

07/28/2009

13:10

Received By:

E McCrary

Other:	_		
Flow:			CFS

7.57

135

26.72

pH Units

uMHO

mg/L

Field Determinations

Dissolved Oxygen: 7.92

Chlorine, residual:

Conductivity:

Temperature:

:Ha

TEST: Alkalinity, Total	ME.					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Alkalinity	34	mg/L	3.8	10	M Chen	8/4/2009

TEST: Hardness, Calcium	ME	THOD: SM 350				
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	30	mg/L	0.7	1	M Chen	8/4/2009

TEST: Residue, Settleable	METHOD: SM 2540F							
ANALYTE	RESULT UNITS MDL MQL ANALYZED E					: DATE		
Settleable Residue	U	ml/L	0.10	0.10	P Leathers	7/29/2009		

TEST: Residue, Suspended	METHOD: SM 2540D					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Suspended Solids	10	mg/L	10	10	A Peeples	7/31/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit MQL - Method Quantitation Limit

K00002659003

Project Name:

TVA-Ash Spill

Sample Description:

Emory River mile 1.9 at underwater weir

Sampler Project Name: TVA Ash Spill

Project Site No.:

2B

Station No.:

EMORY001.9RO

Date/Time Collected:

07/28/2009 10:09

Sampler's Name:

Geoff Klein

County: Sample Matrix: ROANE - 73

EFO:

Water

Sampling Agency:

Knoxville TDEC-WPC

Billing Code: Send Report To: 327.34-20 TDEC-WPC

Agency Invoiced:

TDEC-WPC

Priority Date:

Date/Time Received:

07/28/2009 13:10

Received By:

E McCrary

Field Determinations

pH:

7.46

pH Units

uMHO

Chlorine, residual:

Conductivity: Temperature:

138

26.95

Dissolved Oxygen: 7.27

mg/L

Other:

Flow:

CFS

TEST: Alkalinity, Total	otal METHOD: EPA 310.2							
ANALYTE	RESULT	RESULT UNITS MDL		MQL	ANALYZED BY:	DATE		
Total Alkalinity	92	mg/L	3.8	10	M Chen	8/4/2009		

TEST: Hardness, Calcium	ness, Calcium METHOD: SM 3500-Ca D							
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE		
Calcium hardness	78	mg/L	0.7	1	M Chen	8/4/2009		

TEST: Residue, Settleable METHOD: SM 2540F						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Settleable Residue	U	ml/L	0.10	0.10	P Leathers	7/29/2009

TEST: Residue, Suspended	METHOD: SM 2540D					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Suspended Solids	13	mg/L	10	10	A Peeples	7/31/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00002659004

Project Name:

TVA-Ash Spill

Sample Description:

Emory River mile 1.7

Sampler Project Name: TVA Ash Spill

Project Site No.:

Station No.:

EMORY001.7RO

Date/Time Collected: Sampler's Name:

07/28/2009 10:18 Geoff Klein

County:

ROANE - 73

Sample Matrix:

Water

EFO: Sampling Agency: Knoxville

Billing Code:

TDEC-WPC 327.34-20

Send Report To: Agency Invoiced: TDEC-WPC TDEC-WPC

Priority Date:

Date/Time Received:

07/28/2009

13:10

Received By:

E McCrary

Field Determinations

pH:

7.91

pH Units

uMHO

Chlorine, residual:

Conductivity:

168

Temperature: 26.98

Dissolved Oxygen: 8.17

mg/L

Other:

Flow:

CFS

TEST: Alkalinity, Total	ME					
ANALYTE	RESULT	UNITS MDL		MQL	ANALYZED BY:	DATE
Total Alkalinity	92	mg/L	3.8	10	M Chen	8/4/2009

TEST: Hardness, Calcium	MET	METHOD: SM 3500-Ca D			:	
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	72	mg/L	0.7	1	M Chen	8/4/2009

TEST: Residue, Settleable	METHOD: SM 2540F						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Settleable Residue	U	ml/L	0.10	0.10	P Leathers	7/29/2009	

TEST: Residue, Suspended	METHOD: SM 2540D					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Suspended Solids	10	mg/L	10	10	A Peeples	7/31/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit MQL - Method Quantitation Limit

K00002659005

Project Name:

TVA-Ash Spill

Sample Description:

Emory River mile 0.1

Sampler Project Name: TVA Ash Spill

Project Site No.:

Station No.:

EMORY000.1RO

Date/Time Collected:

07/28/2009 10:29

Sampler's Name:

Geoff Klein

County: Sample Matrix: ROANE - 73

EFO:

Water

Sampling Agency:

Knoxville

Billing Code:

TDEC-WPC

Send Report To:

327.34-20

Agency Invoiced:

TDEC-WPC TDEC-WPC

Priority Date:

Date/Time Received:

07/28/2009

13:10

Received By:

E McCrary

Field Determinations

pH:

8.70

pH Units

uMHO

Chlorine, residual:

Conductivity: Temperature: 261

27.26

Dissolved Oxygen: 11.27

mg/L

Other:

Flow:

CFS

TEST: Alkalinity, Total	METHOD: EPA 310.2							
ANALYTE	RESULT	RESULT UNITS MDL	MDL	MQL	ANALYZED BY:	DATE		
Total Alkalinity	98	mg/L	3.8	10	M Chen	8/4/2009		

TEST: Hardness, Calcium	METHOD: SM 3500-Ca D					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	82	mg/L	0.7	1	M Chen	8/4/2009

TEST: Residue, Settleable	ME.	THOD: SM 254					
ANALYTE	RESULT UNITS MDL		MDL	MQL	. ANALYZED BY: DATE		
Settleable Residue	U	ml/L	0.10	0.10	P Leathers	7/29/2009	

TEST: Residue, Suspended	MET					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Suspended Solids	U	mg/L	10	10	A Peeples	7/31/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit MQL - Method Quantitation Limit

K00002659006

Project Name:

TVA-Ash Spill

Sample Description:

Sampler Project Name: TVA Ash Spill

Clinch River mile 2.3

Project Site No.:

Station No.:

Date/Time Collected:

CLINC002.3RO 07/28/2009 10:48

Sampler's Name:

Geoff Klein

County:

ROANE - 73

Sample Matrix:

Water

EFO:

Knoxville

Sampling Agency:

TDEC-WPC

Billing Code:

327.34-20

Send Report To: Agency invoiced:

Date/Time Received:

TDEC-WPC TDEC-WPC

Priority Date:

07/28/2009

Received By:

13:10

E McCrary

TEST: Alkalinity, Total	METHOD: EPA 310.2					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Alkalinity	92	mg/L	3.8	10	M Chen	8/4/2009

Field Determinations

Dissolved Oxygen: 9.70

Chlorine, residual:

Conductivity:

Temperature:

8.57

252

28.08

pH Units

uMHO

mg/L

CFS

pH:

Other:

Flow:

TEST: Hardness, Calcium	WE.	THOD: SM 350			n	
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	74	mg/L	0.7	1	M Chen	8/4/2009

TEST: Residue, Settleable	ME.					
ANALYTE	RESULT	UNITS	UNITS MDL		ANALYZED BY:	DATE
Settleable Residue	·· U	ml/L	0.10	0.10	P Leathers	7/29/2009

TEST: Residue, Suspended	METHOD: SM 2540D					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Suspended Solids	U	mg/L	10	10	A Peeples	7/31/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00002659007

Project Name:

TVA-Ash Spill

Sample Description:

Sampler Project Name: TVA Ash Spill

Clinch River mile 2.3 -Duplicate

Project Site No.:

5FD

Station No.: Date/Time Collected: CLINC002.3RO-FD

Sampler's Name:

07/28/2009 10:48

County:

Geoff Klein **ROANE - 73**

Sample Matrix:

Water

EFO:

Knoxville

Sampling Agency:

TDEC-WPC 327.34-20

Billing Code: Send Report To: Agency Invoiced:

TDEC-WPC TDEC-WPC

Priority Date:

Date/Time Received:

07/28/2009

Received By:

Total Alkalinity

E McCrary

13:10

89

· .	<u> </u>							
TEST: Alkalinity, Total	MET	0.2						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE		

mg/L

Field Determinations

Dissolved Oxygen: 9.70

Chlorine, residual:

Conductivity:

Temperature:

8.52

252

28.08

M Chen

pH Units

uMHO

mg/L

CFS

8/4/2009

pH:

Other:

Flow:

3.8

10

TEST: Hardness, Calcium	METHOD: SM 3500-Ca D					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	73	mg/L	0.7	1	M Chen	8/4/2009

TEST: Residue, Settleable ANALYTE	WE					
	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Settleable Residue	U	ml/L	0.10	0.10	P Leathers	7/29/2009

TEST: Residue, Suspended ANALYTE	ME					
	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Suspended Solids	U	mg/L	10	10	A Peeples	7/31/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit MQL - Method Quantitation Limit

K00002659008

Project Name:

TVA-Ash Spill

Sample Description:

Clinch River mile 2.3-Field Blank

Sampler Project Name: TVA Ash Spill

Project Site No.:

5FB

Station No.:

CLINC002.3RO-FB

Date/Time Collected:

07/28/2009 10:48

Sampler's Name:

Geoff Klein

County:

ROANE - 73

Sample Matrix:

Water

EFO:

Knoxville

Sampling Agency:

TDEC-WPC

Billing Code:

327.34-20

Send Report To: Agency Invoiced: TDEC-WPC TDEC-WPC

Priority Date:

Date/Time Received:

07/28/2009

13:10

Received By:

E McCrary

Field Determinations pH:

Chlorine, residual: Conductivity: Temperature: **Dissolved Oxygen:**

Other:

Flow:

CFS

TEST: Alkalinity, Total	METHOD: EPA 310.2					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Alkalinity	U	mg/L	3.8	10	M Chen	8/4/2009

TEST: Hardness, Calcium	METHOD: SM 3500-Ca D					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	U	mg/L	0.7	1	M Chen	8/4/2009

TEST: Residue, Suspended ANALYTE	WE.					
	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Suspended Solids	U	mg/L	10	10	A Peeples	7/31/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00002659009

Project Name:

TVA-Ash Spill

Sample Description:

Clinch River TVA Discharge Point

Sampler Project Name: TVA Ash Spill

Project Site No.:

5A

Station No.:

KingAshOutF2

Date/Time Collected:

07/28/2009 11:00

Sampler's Name:

Geoff Klein

County:

ROANE - 73

Sample Matrix:

Water

EFO:

Knoxville

Sampling Agency:

TDEC-WPC

Billing Code:

327.34-20

Send Report To:

TDEC-WPC

Agency Invoiced:

TDEC-WPC

Priority Date:

Date/Time Received:

07/28/2009

13:10

Received By:

E McCrary

Field Determinations

pH:

7.79

pH Units

Chlorine, residual:

Conductivity:

251 28.06 **uMHO**

mg/L

Temperature:

Dissolved Oxygen: 7.00

Other:

Flow:

CFS

TEST: Alkalinity, Total	METHOD: EPA 310.2					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Alkalinity	82	mg/L	3.8	10	M Chen	8/4/2009

TEST: Hardness, Calcium	METHOD: SM 3500-Ca D					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	70	mg/L	0.7	1	M Chen	8/4/2009

TEST: Residue, Settleable	METHOD: SM 2540F					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Settleable Residue	U	ml/L	0.10	0.10	P Leathers	7/29/2009

TEST: Residue, Suspended	ME.					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Suspended Solids	13	mg/L	10	10	A Peeples	7/31/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00002659010

Project Name:

TVA-Ash Spill

pH: 8.53 pH Units

Sample Description: Sampler Project Name: TVA Ash Spill

Clinch River mile 4.5 near Sugar Grove Valley F Chlorine, residual:

Conductivity: Temperature:

Field Determinations

266 **uMHO**

Project Site No.: Station No.:

CLINC004.5RO

Dissolved Oxygen: 10.22

26.84

Date/Time Collected: Sampler's Name:

07/28/2009 11:15 Other: Flow:

mg/L

CFS

County:

Geoff Klein ROANE - 73

Sample Matrix:

Water

EFO: Sampling Agency: Knoxville

Billing Code:

TDEC-WPC 327.34-20

Send Report To: Agency Invoiced:

Date/Time Received:

TDEC-WPC TDEC-WPC

Priority Date:

07/28/2009

13:10

Received By:

E McCrary

TEST: Alkalinity, Total	METHOD: EPA 310.2						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Total Alkalinity	110	mg/L	3.8	10	M Chen	8/4/2009	

TEST: Hardness, Calcium	METHOD: SM 3500-Ca D					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	86	mg/L	0.7	1.	M Chen	8/4/2009

TEST: Residue, Settleable	METHOD: SM 2540F						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Settleable Residue	U	ml/L	0.10	0.10	P Leathers	7/29/2009	

TEST: Residue, Suspended	ME.					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Suspended Solids	U	mg/L	10	10	A Peeples	7/31/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit



STATE OF TENNESSEE DEPARTMENT OF HEALTH **ENVIRONMENTAL LABORATORIES**

TDH: Lab Services JRL Lab Services - Jackson Regional Lab Jackson, TN 38301 731-426-0686

TDH: Lab Services KRL Lab Services - Knoxville Regional Lab Knoxville, TN 37920 865-549-5201

TDH: Lab Services NCL Lab Services - Nashville Central Lab Nashville, TN 37243 615-262-6300

Sent To:

Greg Denton

TDEC-WPC

6th Floor, L & C Tower Annex

401 Church Street

Nashville, TN 37243-1534

Michael Atchley TDEC-WPC

Knoxville FO

3711 Middlebrook Pike Knoxville, TN 37921

Lab ID: K00002659

Knoxville Regional Laboratory

Sampling Agency: TDEC: Division of Water Pollution Control

Billing Code:

327.34-20

This is to certify that the following results were determined using good laboratory pratices and in accordance with federal or state approved methodologies.

nalytical Supervisor

K00002659001

Project Name:

TVA-Ash Spill

Sample Description: Sampler Project Name: TVA Ash Spill

Emory River mile 12.1

Project Site No.:

Station No.:

EMORY012.1RO

Date/Time Collected: Sampler's Name:

07/28/2009 11:52

County:

Geoff Klein **ROANE - 73**

Sample Matrix: EFO:

Water

Sampling Agency: Billing Code:

Knoxville **TDEC-WPC** 327.34-20

Send Report To: Agency Invoiced:

TDEC-WPC TDEC-WPC

Priority Date:

Date/Time Received:

07/28/2009 13:10

Received By:

E McCrary

Field Determinations

:Hq

7.80

pH Units

Chlorine, residual:

Conductivity:

96

uMHO

Temperature: **Dissolved Oxygen:** 7.32

25.52

mg/L

Other:

Flow:

CFS

TEST: Digestion Metals	MET					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Digestion Metals	07/30/2009				W Frye	7/30/2009

TEST: ICP	METHOD: EPA 200.7							
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE		
Iron	190	μg/L	2.9	10	S Ufegbu	8/4/2009		

TEST: ICP-MS	ME	THOD: EPA 20	0.8			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Aluminum	64	μg/L	6.4	10	M Pattanayek	7/31/2009
Antimony	U	μg/L	0.33	. 1	M Pattanayek	7/31/2009
Arsenic	· U	μg/L	0.93	5	M Pattanayek	7/31/2009
Barium	28	μg/L	2.5	5	M Pattanayek	7/31/2009
Beryllium	U	μg/L	0.11	1	M Pattanayek	7/31/2009
Cadmium	Ü	μg/L	0.41	1	M Pattanayek	7/31/2009
Chromium	U	μg/L	2.0	5	M Pattanayek	8/4/2009
Cobalt	0.17J	μg/L	0.04	1	M Pattanayek	7/31/2009
Copper	1.4	μg/L	0.38	1	M Pattanayek	7/31/2009
Lead	0.21J	μg/L	0:10	1	M Pattanayek	7/31/2009
Manganese	46	μg/L	0.42	1	M Pattanayek	7/31/2009
Nickel	0. 70 J	μg/L	0.25	1	M Pattanayek	7/31/2009
Selenium	· U	μg/L	1.3	5	M Pattanayek	7/31/2009
Silver	U	μg/L	0.03	0.25	M Pattanayek	7/31/2009
Thallium	0.079J	μg/L	0.03	1	M Pattanayek	7/31/2009
Vanadium	U	μg/L	3.4	5	M Pattanayek	8/1/2009
Zinc	4.3J	μg/L	1.9	5	M Pattanayek	7/31/2009

K00002659001

Project Name:

TVA-Ash Spill

Sample Description:

Emory River mile 12.1

Sampler Project Name: TVA Ash Spill

Project Site No.:

Station No.:

EMORY012.1RO

Date/Time Collected:

07/28/2009 11:52

Sampler's Name: County:

Geoff Klein

Sample Matrix:

ROANE - 73

EFO:

Water

Sampling Agency:

Knoxville TDEC-WPC

Billing Code: Send Report To: 327.34-20 **TDEC-WPC**

Agency Invoiced:

TDEC-WPC

Priority Date:

Date/Time Received:

07/28/2009

13:10

Received By:

TEST: Mercury

E McCrary

METHOD: EPA 245.1

Field Determinations

Dissolved Oxygen: 7.32

Chlorine, residual:

Conductivity:

Temperature:

7.80

96

25.52

pH Units

uMHO

mg/L

CFS

:Hq

Other:

Flow:

MDL MQL **ANALYZED BY: ANALYTE RESULT** UNITS DATE 0.06J μg/L 0.029 0.2 A Bass 8/4/2009 Mercury

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00002659002

Project Name:

TVA-Ash Spill

Sample Description:

Sampler Project Name: TVA Ash Spill

Emory River mile 2.1

Project Site No.:

Station No.:

EMORY002.1RO

Date/Time Collected: Sampler's Name:

07/28/2009 09:52

County:

Geoff Klein **ROANE - 73**

Sample Matrix: EFO:

Water

Sampling Agency:

Knoxville

Billing Code:

TDEC-WPC 327.34-20

Send Report To: Agency invoiced: TDEC-WPC **TDEC-WPC**

Priority Date:

Date/Time Received:

07/28/2009

13:10

Received By:

E McCrary

Field Determinations

pH:

7.57

pH Units

Chlorine, residual:

Conductivity:

135 26.72 uMHO

Temperature:

Dissolved Oxygen: 7.92

mg/L

Other:

Flow:

CFS

TEST: Digestion Metals	METHOD: EPA 200.2						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Digestion Metals	07/30/2009				W Frye	7/30/2009	

TEST: ICP	METHOD: EPA 200.7							
ANALYTE		RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Iron	. •	150	μg/L	2.9	10	S Ufegbu	8/4/2009	

TEST: ICP-MS	ME	THOD: EPA 20	0.8			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Aluminum	120	μg/L	6.4	10	M Pattanayek	7/31/2009
Antimony	, U	μg/L	0.33	1	M Pattanayek	7/31/2009
Arsenic	2.7J	μg/L	0.93	5	M Pattanayek	8/4/2009
Barium	41	μg/L	2.5	5	M Pattanayek	7/31/2009
Beryllium	U	μg/L	. 0.11	1	M Pattanayek	7/31/2009
Cadmium	U	μg/L	0.41	1	M Pattanayek	7/31/2009
Chromium	2.3J	μg/L	2.0	5	M Pattanayek	8/3/2009
Cobalt	0.30J	μg/L	0.04	1	M Pattanayek	7/31/2009
Copper	0.76J	μg/L	0.38	1	M Pattanayek	7/31/2009
Lead	0.27J	μg/L	0.10	1	M Pattanayek	7/31/2009
Manganese	76	μg/L	0.42	1	M Pattanayek	7/31/2009
Nickel	0.90J	μg/L	0.25	1	M Pattanayek	7/31/2009
Selenium	U	μg/L	1.3	5	M Pattanayek	7/31/2009
Silver	U	μg/L	0.03	0.25	M Pattanayek	7/31/2009
Thallium	1.3	μg/L	0.03	1	M Pattanayek	7/31/2009
Vanadium	U ·	μg/L	3.4	5	M Pattanayek	8/4/2009
Zinc	2.6J	μg/L	1.9	5	M Pattanayek	7/31/2009

K00002659002

Project Name:

TVA-Ash Spill

Sample Description:

Emory River mile 2.1

Sampler Project Name: TVA Ash Spill

TIVA Ach Snill

Project Site No.:

...

Station No.:

EMORY002.1RO

Date/Time Collected:

07/28/2009 09:52

Sampler's Name:

Geoff Klein

County: Sample Matrix:

ROANE - 73

Sample EFO: Water

Sampling Agency:

Knoxville

Billing Code: Send Report To: TDEC-WPC 327.34-20 TDEC-WPC

Agency Invoiced:

TDEC-WPC

Priority Date:

Date/Time Received:

07/28/2009

13:10

Received By:

TEST: Mercury

E McCrary

MET	HOD:	EPA	245.1			
	HI	2TIL		MDL	MQL	

Field Determinations

Dissolved Oxygen: 7.92

Chlorine, residual:

Conductivity:

Temperature:

7.57

135

26.72

pH Units

uMHO

mg/L

CFS

pH:

Other:

Flow:

ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Mercury	U	μg/L	0.029	0.2	A Bass	8/4/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00002659003

Project Name:

TVA-Ash Spill

Sample Description:

Emory River mile 1.9 at underwater weir

Sampler Project Name: TVA Ash Spill

Project Site No.:

2B

Station No.:

EMORY001.9RO

Date/Time Collected:

07/28/2009 10:09

Sampler's Name: County:

Geoff Klein

Sample Matrix:

ROANE - 73

EFO:

Water

Sampling Agency:

Knoxville

Billing Code:

TDEC-WPC 327.34-20

Send Report To: Agency Invoiced:

TDEC-WPC **TDEC-WPC**

Priority Date:

Date/Time Received:

07/28/2009 13:10

Received By:

E McCrary

Field Determinations

pH:

7.46

pH Units

Chlorine, residual:

Conductivity:

138

uMHO

CFS

Temperature:

26.95 **Dissolved Oxygen:** 7.27

mg/L

Other: Flow:

TEST: Digestion Metals	MET	HOD: EPA 20	0.2			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Digestion Metals	07/30/2009	-		:	W Frye	7/30/2009

TEST: ICP	ME:	THOD: EPA 20	0.7			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Iron	140	μg/L	2.9	10	S Ufegbu	8/4/2009

TEST: ICP-MS	ME ⁻	THOD: EPA 20	0.8			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Aluminum	150	μg/L	6.4	10	M Pattanayek	7/31/2009
Antimony	Ú	μg/L	0.33	1	M Pattanayek	7/31/2009
Arsenic	2.8J	μg/L	0.93	5	M Pattanayek	8/4/2009
Barium	50	μg/L	2.5	5	M Pattanayek	7/31/2009
Beryllium	U	μg/L	0.11	1	M Pattanayek	7/31/2009
Cadmium	U	μg/L	0.41	1	M Pattanayek	7/31/2009
Chromium	2.6J	μg/L	2.0	-5	M Pattanayek	8/3/2009
Cobalt	0.29J	μg/L	0.04	1	M Pattanayek	7/31/2009
Copper	3.0	μg/L	0.38	1	M Pattanayek	7/31/2009
Lead	0.38J	μg/L	0.10	1	M Pattanayek	7/31/2009
Manganese	71	μg/L	0.42	1	M Pattanayek	7/31/2009
Nickel	1.1	μg/L	0.25	1	M Pattanayek	7/31/2009
Selenium	. U	μg/L	1.3	5	M Pattanayek	7/31/2009
Silver	U	μg/L	0.03	0.25	M Pattanayek	7/31/2009
Thallium	0.50J	μg/L	0.03	1	M Pattanayek	7/31/2009
Vanadium	6.2	µg/L	3.4	5	M Pattanayek	8/4/2009
Zinc	4.7J	μg/L	1.9	5	M Pattanayek	7/31/2009

K00002659003

Project Name:

TVA-Ash Spill

Sample Description:

Emory River mile 1.9 at underwater weir

Sampler Project Name: TVA Ash Spill

Project Site No.:

2B

Station No.:

Date/Time Collected:

EMORY001.9RO 07/28/2009 10:09

Sampler's Name:

Geoff Klein

County:

ROANE - 73

Sample Matrix:

EFO:

Water Knoxville

Sampling Agency:

TDEC-WPC 327.34-20

Billing Code: Send Report To: Agency Invoiced:

TDEC-WPC TDEC-WPC

Priority Date:

Date/Time Received:

07/28/2009

13:10

Received By:

E McCrary

L A	ET	·LI	\sim	•

METHOD: EPA 245.1

TEST: Mercury RESULT UNITS ANALYTE U

MDL MQL **ANALYZED BY:** DATE 0.2 µg/L 0.029 A Bass 8/4/2009

Field Determinations

Dissolved Oxygen: 7.27

Chlorine, residual:

Conductivity:

Temperature:

7.46

138

26.95

pH Units

uMHO

mg/L

CFS

pH:

Other:

Flow:

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

U - Undetected

Mercury

K00002659004

Project Name:

TVA-Ash Spill

Sample Description:

Emory River mile 1.7

Sampler Project Name: TVA Ash Spill

Project Site No.:

EMORY001.7RO

Date/Time Collected:

10:18 07/28/2009

Sampler's Name: County:

Geoff Klein

Sample Matrix:

Station No.:

ROANE - 73

EFO:

Water Knoxville **TDEC-WPC**

Sampling Agency: Billing Code: Send Report To: Agency Invoiced:

327.34-20 TDEC-WPC TDEC-WPC

Priority Date:

Date/Time Received:

07/28/2009

13:10

Received By:

E McCrary

Field Determinations

pH:

7.91

pH Units

uMHO-

Chlorine, residual:

Conductivity:

Temperature:

168

26.98

mg/L

Dissolved Oxygen: 8.17 Other:

Flow:

CFS

TEST: Digestion Metals	igestion Metals METHOD: EPA 200.2						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Digestion Metals	07/30/2009				W Frye	7/30/2009	

TEST: ICP	METHOD: EPA 200.7						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Iron	U	μg/L	2.9	10	S Ufegbu	8/4/2009	

TEST: ICP-MS	ME.	THOD: EPA 20	0.8		•	
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Aluminum	110	μg/L	6.4	10	M Pattanayek	7/31/2009
Antimony	U	μg/L	0.33	1	M Pattanayek	7/31/2009
Arsenic	5.2	μg/L	0.93	5	M Pattanayek	8/4/2009
Barium	53	μg/L	2.5	5	M Pattanayek	7/31/2009
Beryllium	U	μg/L	0.11	1	M Pattanayek	7/31/2009
Cadmium	Ü	μg/L	0.41	1	M Pattanayek	7/31/2009
Chromium	2.1J	μg/L	2.0	5	M Pattanayek	7/31/2009
Cobalt	0.22J	μg/L	0.04	1	M Pattanayek	7/31/2009
Copper	2.3	μg/L	0.38	1	M Pattanayek	7/31/2009
Lead	0.23J	μg/L	0.10	1	M Pattanayek	7/31/2009
Manganese	. 48	μg/L	0.42	1	M Pattanayek	7/31/2009
Nickel	0.87J	μg/L	0.25	1	M Pattanayek	7/31/2009
Selenium	. U	μg/L	1.3	5	M Pattanayek	7/31/2009
Silver	Ü	μg/L	0.03	0.25	M Pattanayek	7/31/2009
Thallium	0.31J	μg/L	0.03	1	M Pattanayek	7/31/2009
Vanadium	U	μg/L	3.4	5	M Pattanayek	8/4/2009
Zinc	2.2J	μg/L	1.9	5	M Pattanayek	7/31/2009

K00002659004

Project Name:

TVA-Ash Spill

Sample Description:

Emory River mile 1.7

Sampler Project Name: TVA Ash Spill

Project Site No.:

Station No.:

EMORY001.7RO

Date/Time Collected:

07/28/2009 10:18

Sampler's Name: County:

Geoff Klein

Sample Matrix:

ROANE - 73

Water

EFO:

Knoxville

Sampling Agency: **Billing Code:**

TDEC-WPC

Send Report To:

327.34-20 **TDEC-WPC TDEC-WPC**

Agency Invoiced: **Priority Date:**

Date/Time Received:

07/28/2009 13:10

Received By:

E McCrary

Field Determinations

pH:

7.91

pH Units

Chiorine, residual:

Conductivity: Temperature:

168 26.98 **uMHO**

Dissolved Oxygen: 8.17

mg/L

Other:

Flow:

CFS

TEST: Mercury	ME	THOD: EPA 24	5.1			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Mercury	· U	μg/L	0.029	0.2	A Bass	8/4/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00002659005

Project Name:

TVA-Ash Spill

Sample Description:

Emory River mile 0.1

Sampler Project Name: TVA Ash Spill

Project Site No.:

Station No.:

EMORY000.1RO

Date/Time Collected: Sampler's Name:

07/28/2009 10:29

County:

Geoff Klein

Sample Matrix:

ROANE - 73 Water

EFO: Sampling Agency:

Knoxville TDEC-WPC

Billing Code: Send Report To: 327.34-20 **TDEC-WPC**

Agency Invoiced: **Priority Date:**

TDEC-WPC

Date/Time Received:

07/28/2009

13:10

Received By:

E McCrary

Field Determinations

pH:

8.70

pH Units

uMHO

mg/L

Chlorine, residual:

Conductivity: Temperature:

261

27.26

Dissolved Oxygen: 11.27

Other: Flow:

CFS

TEST: Digestion Metals	MET	HOD: EPA 20	0.2			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Digestion Metals	07/30/2009				W Frye	7/30/2009

TEST: ICP METHOD: EPA 200.7						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Iron	67	μg/L	2.9	10	S Ufegbu	8/4/2009

TEST: ICP-MS	ME.	THOD: EPA 20	0.8			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Aluminum	100	μg/L	6.4	10	M Pattanayek	7/31/2009
Antimony	U	μg/L	0.33	. 1	M Pattanayek	7/31/2009
Arsenic	6.7	μg/L	0.93	5	M Pattanayek	8/3/2009
Barium	56	µg/L	2.5	5	M Pattanayek	7/31/2009
Beryllium	U	μg/L	0.11	1	M Pattanayek	7/31/2009
Cadmium	U	µg/L	0.41	· 1	M Pattanayek	7/31/2009
Chromium	U .	μg/L	2.0	5	M Pattanayek	8/3/2009
Cobalt	0.27J	μg/L	0.04	1	M Pattanayek	7/31/2009
Copper	2.5	μg/L	0.38	1	M Pattanayek	7/31/2009
Lead	0.27J	μg/L	0.10	1	M Pattanayek	7/31/2009
Manganese	43	μg/L	0.42	1	M Pattanayek	7/31/2009
Nickel	1.1	μg/L	0.25	1	M Pattanayek	7/31/2009
Selenium	î. U	μg/L	1.3	5	M Pattanayek	7/31/2009
Silver	0.071J	μg/L	0.03	0.25	M Pattanayek	7/31/2009
Thallium	1.3	μg/L	0.03	1	M Pattanayek	7/31/2009
Vanadium	4.5J	μg/L	3.4	.5	M Pattanayek	8/4/2009
Zinc	2.4J	μg/L	1.9	5	M Pattanayek	7/31/2009

K00002659005

Project Name:

TVA-Ash Spill

Sample Description:

Emory River mile 0.1

Sampler Project Name: TVA Ash Spill

Project Site No.:

4

Station No.:

EMORY000.1RO

Date/Time Collected:

07/28/2009

10:29

Sampler's Name: County:

Geoff Klein

Sample Matrix:

ROANE - 73

EFO:

Water Knoxville

Sampling Agency:

TDEC-WPC 327.34-20

Billing Code: Send Report To: **Agency Invoiced:**

TDEC-WPC TDEC-WPC

Priority Date:

Date/Time Received:

07/28/2009

13:10

RESULT

U

Received By:

TEST: Mercury

ANALYTE

Mercury

E McCrary

METHOD: EPA 245.1

UNITS

μg/L

MDL 0.029

MQL **ANALYZED BY:**

A Bass

0.2

Field Determinations

Dissolved Oxygen: 11.27

Chlorine, residual:

Conductivity:

Temperature:

8.70

261

27.26

pH:

Other:

Flow:

DATE

8/4/2009

pH Units

uMHO

mg/L

CFS

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00002659006

Project Name:

TVA-Ash Spill

Sample Description:

Clinch River mile 2.3

Sampler Project Name: TVA Ash Spill

TVA Ash Csill

Project Site No.:

5

Station No.:

Date/Time Collected:

CLINC002.3RO 07/28/2009 10:48

Sampler's Name:

Geoff Klein

County: Sample Matrix:

ROANE - 73

EFO:

Water

Sampling Agency:

Knoxville TDEC-WPC 327.34-20

Billing Code: Send Report To: Agency Invoiced:

TDEC-WPC

Priority Date:

Date/Time Received:

07/28/2009

13:10

Received By:

E McCrary

Field Determinations

pH:

8.57

pH Units

mg/L

Chlorine, residual:

Conductivity:

252 28.08 uMHO

Temperature: 28.08 **Dissolved Oxygen:** 9.70

Other:

Flow: CFS

TEST: Digestion Metals	MET	•				
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Digestion Metals	07/30/2009				W Frye	7/30/2009

TEST: ICP	METHOD: EPA 200.7							
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE		
Iron	57	μg/L	2.9	10	S Ufegbu	8/4/2009		

TEST: ICP-MS		METHOD: EPA 200.8				-	
ANALYTE		RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Aluminum	,	86	μg/L	6.4	10	M Pattanayek	7/31/2009
Antimony		U	μg/L	0.33	1	M Pattanayek	7/31/2009
Arsenic		2.5J	μg/L	0.93	5	M Pattanayek	8/4/2009
Barium	•	44	μg/L	2.5	5	M Pattanayek	7/31/2009
Beryllium		U	μg/L	0.11	1	M Pattanayek	7/31/2009
Cadmium		U	μg/L	0.41	1	M Pattanayek	7/31/2009
Chromium	•	U	μg/L	2.0	5	M Pattanayek	8/3/2009
Cobalt		0.18J	μg/L	0.04	1	M Pattanayek	7/31/2009
Copper		2.9	μg/L	0.38	1	M Pattanayek	7/31/2009
Lead		1.0	μg/L	0.10	1	M Pattanayek	7/31/2009
Manganese		29	μg/L	0.42	1	M Pattanayek	7/31/2009
Nickel		0.80J	μg/L	0.25	1	M Pattanayek	7/31/2009
Selenium		. U	μg/L	1.3	5	M Pattanayek	7/31/2009
Silver		U	μg/L	0.03	0.25	M Pattanayek	7/31/2009
Thallium		0.36J	μg/L	0.03	1	M Pattanayek	7/31/2009
Vanadium	ξ.	4.0J	μg/L	3.4	5	M Pattanayek	8/4/2009
Zinc		3.3J	μg/L	1.9	5	M Pattanayek	7/31/2009

K00002659006

Project Name:

TVA-Ash Spill

Sample Description:

Clinch River mile 2.3

Sampler Project Name: TVA Ash Spill

Project Site No.:

5

Station No.:

CLINC002.3RO 10:48

Date/Time Collected:

07/28/2009

Sampler's Name: County:

Geoff Klein

Sample Matrix:

ROANE - 73

EFO:

Water Knoxville

Sampling Agency: **Billing Code:**

TDEC-WPC 327.34-20 TDEC-WPC

Send Report To: Agency Invoiced:

TDEC-WPC

Priority Date:

Date/Time Received:

07/28/2009

13:10

Received By:

TEST: Mercury

E McCrary

METHOD:	EPA 245.1	
(V)		

Field Determinations

Dissolved Oxygen: 9.70

Chlorine, residual:

Conductivity:

Temperature:

pH:

Other:

Flow:

8.57

252

28.08

pH Units

uMHO

mg/L

CFS

ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Mercury	U	μg/L	0.029	0.2	A Bass	8/4/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00002659007

Project Name:

TVA-Ash Spill

Sample Description:

Clinch River mile 2.3 -Duplicate

Sampler Project Name: TVA Ash Spill

Project Site No.:

5FD

Station No.:

CLINC002.3RO-FD

Date/Time Collected:

07/28/2009 10:48

Sampler's Name:

Geoff Klein

County: Sample Matrix: **ROANE - 73**

EFO:

Water

Sampling Agency:

Knoxville

Billing Code:

TDEC-WPC 327.34-20 TDEC-WPC

Send Report To: Agency Invoiced:

TDEC-WPC

Priority Date:

Date/Time Received:

07/28/2009

13:10

Received By:

E McCrary

Field Determinations

Dissolved Oxygen: 9.70

Chlorine, residual:

Conductivity:

Temperature:

8.52

252

28.08

pH Units

uMHO

mg/L

CFS

pH:

Other:

Flow:

TEST: Digestion Metals METHOD: EPA 200.2 MDL MQL ANALYTE RESULT **ANALYZED BY:** UNITS DATE 07/30/2009 **Digestion Metals** W Frye 7/30/2009

TEST: ICP	ME	THOD: EPA 20	0.7			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Iron	56	μg/L	2.9	10	S Ufegbu	8/4/2009

TEST: ICP-MS	MET	THOD: EPA 20	0.8			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Aluminum	98	μg/L	6.4	10	M Pattanayek	7/31/2009
Antimony	U	μg/L	0.33	1	M Pattanayek	7/31/2009
Arsenic	3.0J	μg/L	0.93	5	M Pattanayek	8/4/2009
Barium	52	μg/L	2.5	5	M Pattanayek	7/31/2009
Beryllium	U	μg/L	0.11	1	M Pattanayek	7/31/2009
Cadmium	U	μg/L	0.41	1	M Pattanayek	7/31/2009
Chromium	· U	μg/L	2.0	5	M Pattanayek	8/3/2009
Cobalt	0.20J	μg/L	0.04	1	M Pattanayek	7/31/2009
Copper	3.1	μg/L	0.38	1	M Pattanayek	7/31/2009
Lead	0.20J	μg/L	0.10	1	M Pattanayek	7/31/2009
Manganese	34	μg/L	0.42	1	M Pattanayek	7/31/2009
Nickel	1.0	μg/L	0.25	1	M Pattanayek	7/31/2009
Selenium	U	μg/L	1.3	5	M Pattanayek	7/31/2009
Silver	U	μg/L	0.03	0.25	M Pattanayek	7/31/2009
Thallium	0.29J	μg/L	0.03	1	M Pattanayek	7/31/2009
Vanadium	5.2	μg/L	3.4	5	M Pattanayek	8/4/2009
Zinc	2.6J	μg/L	1.9	5	M Pattanayek	7/31/2009

K00002659007

Project Name:

TVA-Ash Spill

Sample Description:

Clinch River mile 2.3 - Duplicate

Sampler Project Name: TVA Ash Spill

Project Site No.:

5FD

Station No.:

CLINC002.3RO-FD

Date/Time Collected:

07/28/2009 10:48

Sampler's Name:

Geoff Klein

County: Sample Matrix: **ROANE - 73**

EFO:

Water

Sampling Agency: **Billing Code:**

Knoxville TDEC-WPC 327.34-20

Send Report To: Agency Invoiced:

TDEC-WPC TDEC-WPC

Priority Date:

Date/Time Received:

07/28/2009 13:10

Received By:

E McCrary

TEST: Mercury METHOD: EPA 245.1							
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Mercury	0.03J	μg/L	0.029	0.2	A Bass	8/4/2009	

Field Determinations

Dissolved Oxygen: 9.70

Chlorine, residual:

Conductivity:

Temperature:

8.52

252

28.08

pH Units

uMHO

mg/L

CFS

pH:

Other:

Flow:

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00002659008

Project Name:

TVA-Ash Spill

Sample Description:

Clinch River mile 2.3-Field Blank

Sampler Project Name: TVA Ash Spill

Project Site No.:

5FB

Station No.:

CLINC002.3RO-FB

Date/Time Collected:

07/28/2009 10:48

Sampler's Name:

Geoff Klein

County: **Sample Matrix:** **ROANE - 73**

EFO:

Water

Knoxville

Sampling Agency: **Billing Code:**

TDEC-WPC 327.34-20

Send Report To: Agency Invoiced:

TDEC-WPC TDEC-WPC

Priority Date:

07/28/2009

13:10

Received By:

E McCrary

TEST: Digestion Metals

Date/Time Received:

METHOD: EPA 200.2

ANALYTE

TEST: ICP

UNITS

RESULT

MDL MQL

Field Determinations

Chlorine, residual:

Dissolved Oxygen:

Conductivity:

Temperature:

pH:

Other: Flow:

ANALYZED BY:

W Frye

DATE 7/30/2009

CFS

Digestion Metals

07/30/2009

METHOD: EPA 200.7

ANALYTE RESULT U iron

UNITS μg/L

2.9 10

MQL

MDL

ANALYZED BY: S Ufegbu

DATE 8/4/2009

TEST: ICP-MS	METHOD: EPA 200.8
1201. 101-1110	METHOD: El A 200.0

ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Aluminum	U	μg/L	6.4	10	M Pattanayek	7/31/2009
Antimony	U	μg/L	0.33	· 1	M Pattanayek	7/31/2009
Arsenic	· U	μg/L	0.93	5	M Pattanayek	8/4/2009
Barium	· U	μg/L	2.5	5	M Pattanayek	7/31/2009
Beryllium	U .	μg/L	0.11	1	M Pattanayek	7/31/2009
Cadmium	· U	μg/L	0.41	1 1	M Pattanayek	7/31/2009
Chromium	2.5J	μg/L	2.0	5	M Pattanayek	8/3/2009
Cobalt	U .	μg/L	0.04	1	M Pattanayek	7/31/2009
Copper	U	μg/L	0.38	1	M Pattanayek	7/31/2009
Lead	U	μg/L	0.10	1	M Pattanayek	7/31/2009
Manganese	. U	μg/L	0.42	1	M Pattanayek	7/31/2009
Nickel	. U	μg/L	0.25	1	M Pattanayek	7/31/2009
Selenium	U	μg/L	1.3	5	M Pattanayek	7/31/2009
Silver	U	μg/L	0.03	0.25	M Pattanayek	7/31/2009
Thallium	0.15J	μg/L	0.03	1	M Pattanayek	7/31/2009
Vanadium	U	μg/L	3.4	5	M Pattanayek	8/4/2009
Zinc	U	μg/L	1.9	5	M Pattanayek	7/31/2009

K00002659008

Project Name:

TVA-Ash Spill

Sample Description:

Clinch River mile 2.3-Field Blank

Sampler Project Name: TVA Ash Spill

TVA Asis Oscill

Project Site No.:

5FB

Station No.:

0.0

Date/Time Collected:

CLINC002.3RO-FB 07/28/2009 10:48

Sampler's Name:

Geoff Klein

County:

Geon Klein

Sample Matrix:

ROANE - 73

EFO:

Water Knoxville

Sampling Agency:

TDEC-WPC 327.34-20

Billing Code: Send Report To: Agency Invoiced:

TDEC-WPC

Priority Date:

Date/Time Received:

07/28/2009

13:10

Received By:

E McCrary

Field Determinations

pH:

Chlorine, residual: Conductivity: Temperature: Dissolved Oxygen:

Other:

Flow:

CFS

TEST: Mercury METHOD: EPA 245.1							
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Mercury	U	μg/L	0.029	0.2	A Bass	8/4/2009	

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00002659009

Project Name:

TVA-Ash Spill

Sample Description:

Clinch River TVA Discharge Point

Sampler Project Name: TVA Ash Spill **Project Site No.:**

5A

Station No.:

KingAshOutF2

Date/Time Collected: Sampler's Name:

07/28/2009 11:00 Geoff Klein

County: Sample Matrix: ROANE - 73

EFO:

Water

Sampling Agency:

Knoxville **TDEC-WPC**

Billing Code: Send Report To: 327.34-20 **TDEC-WPC** TDÉC-WPC

Agency Invoiced: **Priority Date:**

Date/Time Received:

07/28/2009 13:10

Received By:

E McCrary

Field Determinations

pH:

7.79

pH Units

Chlorine, residual:

Conductivity:

251

uMHO

Temperature: **Dissolved Oxygen:** 7.00

28.06

mg/L

Other:

Flow: **CFS**

TEST: Digestion Metals	MET	HOD: EPA 20	0.2			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Digestion Metals	07/30/2009				W Frye	7/30/2009

TEST: ICP METHOD: EPA 200.7							
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Iron	120	μg/L	2.9	10	S Ufegbu	8/4/2009	

TEST: ICP-MS	ME:	METHOD: EPA 200.8				
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Aluminum	150	μg/L	6.4	10	M Pattanayek	7/31/2009
Antimony	U	μg/L	0.33	1	M Pattanayek	7/31/2009
Arsenic	4.3J	μg/L	0.93	5	M Pattanayek	8/4/2009
Barium	53	μg/L	2.5	5	M Pattanayek	7/31/2009
Beryllium	, U	μg/L	0.11	1	M Pattanayek	7/31/2009
Cadmium	U	μg/L	0.41	1	M Pattanayek	7/31/2009
Chromium	3.0J	μg/L	2.0	5	M Pattanayek	8/3/2009
Cobalt	U	μg/L	0.04	1	M Pattanayek	7/31/2009
Copper	4.8	μg/L	0.38	1	M Pattanayek	7/31/2009
Lead	0.32J	μg/L	0.10	1	M Pattanayek	7/31/2009
Manganese	56	μg/L	0.42	1	M Pattanayek	7/31/2009
Nickel	1.1	μg/L	0.25	1	M Pattanayek	7/31/2009
Selenium	. U	μg/L	1.3	5	M Pattanayek	7/31/2009
Silver	U	μg/L	0.03	0.25	M Pattanayek	7/31/2009
Thallium	0.17J	μg/L	0.03	1	M Pattanayek	7/31/2009
Vanadium	5.7	μg/L	3.4	. 5	M Pattanayek	8/4/2009
Zinc	6.5	μg/L	1.9	5	M Pattanayek	7/31/2009

K00002659009

Project Name:

TVA-Ash Spill

Sample Description:

Clinch River TVA Discharge Point

Sampler Project Name: TVA Ash Spill

Project Site No.:

5A

KingAshOutF2 Station No.:

Date/Time Collected:

07/28/2009 11:00

Sampler's Name: County:

Geoff Klein **ROANE - 73**

Sample Matrix:

Water

EFO:

Knoxville

Sampling Agency: **Billing Code:**

TDEC-WPC 327.34-20

Send Report To: Agency Invoiced: TDEC-WPC TDEC-WPC

Priority Date:

Date/Time Received:

07/28/2009

13:10

Received By:

TEST: Mercury

E McCrary

METHOD: E	EPA 2	245.1
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Field Determinations

Dissolved Oxygen: 7.00

Chlorine, residual:

Conductivity:

Temperature:

7.79

251

28.06

pH Units

uMHO

mg/L

CFS

pH:

Other:

Flow:

ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Mercury	U	μg/L	0.029	0.2	A Bass	8/4/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00002659010

Project Name:

TVA-Ash Spill

Sample Description:

Clinch River mile 4.5 near Sugar Grove Valley F Chlorine, residual:

Field Determinations

Dissolved Oxygen: 10.22

Conductivity:

Temperature:

8.53

266

26.84

W Frye

pH Units

uMHO

mg/L

CFS

7/30/2009

pH:

Other:

Flow:

Sampler Project Name: TVA Ash Spill

Project Site No.: Station No.:

CLINC004.5RO

Date/Time Collected:

07/28/2009 11:15

Sampler's Name:

Geoff Klein

County:

ROANE - 73

Sample Matrix:

Water

EFO:

Knoxville

Sampling Agency: **Billing Code:**

TDEC-WPC 327.34-20

Send Report To: Agency Invoiced: **TDEC-WPC** TDEC-WPC

Priority Date:

Date/Time Received:

07/28/2009

13:10

07/30/2009

Received By:

Digestion Metals

E McCrary

TEST: Digestion Metals	MET	THOD: EPA 20	0.2				1
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	-

TEST: ICP METHOD: EPA 200.7							
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Iron	62	µg/L	2.9	10	S Ufegbu	8/4/2009	

TEST: ICP-MS	ME.	THOD: EPA 20	0.8			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Aluminum	58	μg/L	6.4	10	M Pattanayek	7/31/2009
Antimony	U	μg/L	0.33	1	M Pattanayek	7/31/2009
Arsenic	U	μg/L	0.93	5	M Pattanayek	8/4/2009
Barium	39	μg/L	2.5	5	M Pattanayek	7/31/2009
Beryllium	U	μg/L	0.11	1	M Pattanayek	7/31/2009
Cadmium	U	μg/L	0.41	1	M Pattanayek	7/31/2009
Chromium	U	μg/L	2.0	5	M Pattanayek	8/3/2009
Cobalt	0.18J	μg/L	0.04	1	M Pattanayek	7/31/2009
Copper	1.7	μg/L	0.38	1	M Pattanayek	7/31/2009
Lead	0.20J	μg/L	0.10	1	M Pattanayek	7/31/2009
Manganese	26	μg/L	0.42	1	M Pattanayek	7/31/2009
Nickel	0.94J	μg/L	0.25	1	M Pattanayek	7/31/2009
Selenium	U	μg/L	1.3	5	M Pattanayek	7/31/2009
Silver	U	μg/L	0.03	0.25	M Pattanayek	7/31/2009
Thallium	0.20J	μg/L	0.03	1	M Pattanayek	7/31/2009
Vanadium	U ·	μg/L	3.4	5	M Pattanayek	8/4/2009
Zinc	2.9J	μg/L	1.9	5	M Pattanayek	7/31/2009

K00002659010

Project Name:

TVA-Ash Spill

Sample Description:

Clinch River mile 4.5 near Sugar Grove Valley F Chlorine, residual:

Field Determinations

Dissolved Oxygen: 10.22

Conductivity:

Temperature:

8.53

266

26.84

pH Units

uMHO

mg/L

CFS

pH:

Other:

Flow:

Sampler Project Name: TVA Ash Spill

Project Site No.:

Station No.:

CLINC004.5RO

Date/Time Collected:

07/28/2009 11:15

Sampler's Name:

Geoff Klein

County:

ROANE - 73

Sample Matrix: EFO:

Water

Sampling Agency: Billing Code:

Knoxville TDEC-WPC 327.34-20

Send Report To: Agency Invoiced:

TDEC-WPC TDEC-WPC

Priority Date:

Date/Time Received:

07/28/2009

13:10

Received By:

E McCrary

TEST: Mercury METHOD: EPA 245.1						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Mercury	U	μg/L	0.029	0.2	A Bass	8/4/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit